

Correspondence

Specific immobilization of the treponeme—A phenomenon known long ago but sunk into oblivion and rediscovered?

TO THE EDITOR, *British Journal of Venereal Diseases*

SIR—A notable landmark in the history of syphilis is the year 1949 when Nelson and Mayer described the treponemal immobilization test and thus laid the foundations of our understanding of the results of serum antibody tests for syphilis.

Without questioning the importance of the discovery by Nelson and Mayer (1949), we found the following reference in 'Syphilis', a book by Torsujev and Bucharovic (1975):

'In 1907 D. K. Zabolotnyj and P. P. Maslokověc determined that treponema lose their motility in the serum of the sick . . .'. We then obtained the original publication which appeared in the 11th copy of the periodical *Russkij Vrač* (*Russian Physician*) of 1907; on page 361 there is an article entitled 'Nabljudenija nad dviženiem i sklejvaniem blednoj spirochety (*Spirochaeta pallida*)' ('Investigation of the Motility and Clustering of *Spirochaeta pallida*').

The authors describe the immobilization of treponemes which is due to the effects of the syphilitic serum and their further changes, for example, clustering, lysis, and so on, which are due to the effects of specific antibodies.

This reminded us of the belief that a year after the discovery of *Treponema pallidum* by Schaudinn and Hoffmann (1905), Prowazek knew about the immobilization of treponemes. This is possible because Prowazek was a colleague of Schaudinn. We procured the entire bibliography of Prowazek—containing 208 works—including several dealing with spirochaetes; among others there is 'Über die Immunitätserscheinungen bei der Spirochaetenseptikämie der Hühner und über die Frage der Zugehörigkeit der Spirochaeten zu den Protozoen' (Immunity Phenomena of Septicaemia caused by *Spirochaeta*) published by Neufeld and Prowazek (1907). This work describes several immune phenomena which are attributed to a later date, including a passage which shows that the authors understood the essentials of immobilization of treponemes so well that they were aware that complement is necessary for the development of the immobilization effect of specific antibodies against treponemes.

Of course, at that time they were not in a position to appreciate the scope and application of their discovery; but we were interested to see how Neufeld and Prowazek

on the one hand and Zabolotnyj and Maslokověc on the other could have influenced each others' research, for both teams published their observations in the year 1907. It may be supposed that they were all acquainted with one another, because Prowazek and Zabolotnyj met at a Congress in Berne in 1906 (Prowazek, 1907), and it may be assumed that they shared their observations on immunology.

Furthermore, Tani, Matsumara, and Hayashi (1959) published a treatise entitled 'Pfeiffer's Phenomenon of Syphilis Spirochaetes and Active Immunization against Syphilis', which describes (in effect) a method for carrying out an immobilization test in the peritoneum of a guinea-pig. Then, in a paper by Uhlenhuth and Haendel (1907) entitled 'Vergleichende Untersuchungen über Spirochaeten der in Afrika, Amerika und Europa vorkommenden Rekurrenserkrankungen' (1907), we found a passage which showed that these workers also had demonstrated treponemal immobilization.

It appears that biological science comprises many cases of forgotten immunological and other observations described again as new discoveries many years later.

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